

**CITY OF MOUNTAIN VIEW, CALIFORNIA
INSTALLATION OF PEDESTRIAN COUNTDOWN SIGNALS
TECHNICAL PROVISIONS
BID NO. R050742**

A. SCOPE OF WORK

The work shall consist of furnishing all labor, materials, equipment and tools necessary for the installation of two hundred twenty-eight (228) pedestrian countdown signals complete and operating at various intersections throughout the City of Mountain View, California.

The work includes, but is not limited to, the installation of pedestrian countdown signals, complete and operating, at the following locations:

1. Castro Street/Villa Street
2. Castro Street/Dana Street
3. Castro Street/Mercy Street
4. Castro Street/Church Street
5. Shoreline Boulevard/Montecito Avenue/Stierlin Road
6. Shoreline Boulevard/Latham Street/Church Street
7. Shoreline Boulevard/Middlefield Road
8. Shoreline Boulevard/Terra Bella Avenue
9. Shoreline Boulevard/Wright Avenue
10. Rengstorff Avenue/Latham Street
11. Rengstorff Avenue/California Street
12. Rengstorff Avenue/Montecito Avenue/Jewell Place
13. Rengstorff Avenue/Middlefield Road
14. Rengstorff Avenue/Old Middlefield Way
15. Moffett Boulevard/Central Avenue
16. Moffett Boulevard/Middlefield Road
17. Grant Road/Bentley Square
18. Grant Road/Cuesta Drive
19. Grant Road/Eunice Avenue/North Drive
20. California Street/Ortega Avenue
21. California Street/Showers Drive
22. California Street/Pacchetti Way
23. Evelyn Avenue/Hope Street
24. Shoreline Boulevard/Villa Street
25. Middlefield Road/Ellis Street
26. Evelyn Avenue/Calderon Avenue
27. Bush Street/Villa Street
28. Evelyn Avenue/Pioneer Way

- 29. Evelyn Avenue/Bush Street
- 30. San Antonio Road/Fayette Avenue
- 31. Grant Road/Bryant Avenue
- 32. Evelyn Avenue/Ferry Morse Way
- 33. Evelyn Avenue/Moorpark Way

The contractor shall provide all necessary traffic control and general safety measures.

The contractor shall perform all other incidental work necessary to ensure a complete project in accordance with the plans and these specifications.

All work shall be done in accordance with the City of Mountain View Standard Provisions, the 2002 State Standard Plans and Specifications and these project plans and specifications.

B. CONTACTS

Traffic Engineering Section
City of Mountain View
500 Castro Street
Mountain View, CA 94041
(650) 903-6311

C. AUTHORITY OF THE ENGINEER

All work must be coordinated through Mr. Dennis Belluomini, Traffic Engineer of the City's Public Works Department, or his designated representative.

The Engineer will resolve the following questions:

- The quality and acceptability of materials furnished.
- The interpretation of the plans and specifications.
- The satisfactory and acceptable completion of the work in conformance to the contract.

In the event of a doubt or question regarding the true meaning of parts of the contract documents, clarification shall be requested from the Traffic Engineer, whose decision shall be final.

In case of a discrepancy between a drawing and the figures written thereon, the figures shall be taken as correct. Scaled dimensions shall not be used in the performance of the work. Discrepancies shall be brought to the attention of the Engineer.

The Engineer shall have the authority to stop the work for any reason.

D. UNDERGROUND UTILITIES

The Contractor shall verify the location of underground utilities in the work area and shall be responsible for repairing or rerouting any utilities or pipeline damaged during excavation. The Contractor shall alert the Engineer if utilities are present at the area of the installation and propose alternate location to the Engineer for acceptance.

E. HEALTH AND SAFETY

The Contractor shall comply with provisions of safety regulatory bodies, including, but not limited to:

1. OSHA.
2. 29 Code of Federal Regulations (CFR) 1992/1910 and CFR 1910.120.
3. California Department of Industrial Relations.
4. Division of Industrial Safety (Safety Orders).
5. All other application of Federal, State, County and local laws, ordinances, codes and requirements.

The Contractor shall assume full responsibility to assure that during construction, his/her employees, subcontractors and their employees follow the Health and Safety Plan.

The Contractor shall require all personnel on the site to wear the appropriate personal protective equipment that may be needed, including steel-toe boots, hard hats, orange safety vests, safety belts and any other equipment as required to safely perform the work.

If the Contractor violates any health and safety rule or regulation, the Engineer may issue an order to stop all work until the violations are remedied. Continued violation of the Health and Safety Plan will be grounds to terminate the

Contractor's work. The City will then be eligible to hire a second contractor to complete the work at the Contractor's cost.

F. CONDUCTORS AND WIRING

F-1. General

Conductors and wiring shall conform to the State Standard Specifications in Section 86-2.08, "Conductors," and Section 86-2.09, "Wiring," of the State Standard Specifications, City of Mountain View Standard Provisions and these Technical Specifications.

F-2. Installation

Conductor installation shall conform to the State Standard Specifications, Section 86-2.09.

F-3. Connectors, Terminals, Splicing and Insulation

- a. Connectors and terminals shall conform to Section 86-2.09C.
- b. Splicing and terminations shall conform to the State Standard Specifications in Section 86-2.09D and in accordance to splicing details and Method B insulation method shown in ES-13 of the State Standard Plans.
- c. Splice insulation shall conform to the State Standard Specifications, Section 86-2.09E.

F-4. Fused Splice Connectors

Fused splice connectors shall conform to the State Standard Specifications, Section 86-2.095.

F-5. Bonding and Grounding

Bonding and grounding shall conform to the State Standard Specifications, Section 86-2.10, "Bonding and Grounding."

F-6. Conductor Identification

All conductors shall be identified in conformance to the State Standard Specifications, Section 86-2.08A.

G. LIGHT EMITTING DIODE PEDESTRIAN COUNTDOWN SIGNALS

In locations where the existing pedestrian signal will not accommodate the nominal 16" × 18" LED pedestrian countdown traffic signal module, the contractor shall furnish and install a new LED 16" × 18" pedestrian countdown traffic signal in accordance with these specifications.

G-1. General

Pedestrian countdown light emitting diode (LED) traffic signal modules shall be designed as a retrofit replacement for the message bearing surface of a nominal 16" × 18" Type A pedestrian countdown traffic signal housing built to Institute of Transportation Engineers' (ITE) "Pedestrian Traffic Control Signal Indications" (PTCSI) Standard. **The message-bearing surface of the module shall be supplied with an overlapping, full "UPRAISED HAND" and "WALKING PERSON" symbol** that complies with PTCSI standard for these symbols for a message-bearing surface of the size specified and **the numbers 00 to 99 on the numerical countdown display. The numerical countdown display shall have 2 rows of LEDs and a minimum height of 7 inches.** The modules shall use light emitting diodes as the light source as shown on the plans and in conformance with these specifications. Outlined shapes shall not be accepted.

LED pedestrian countdown signal modules used on this project shall be from a single manufacturer.

Circuit boards and power supplies shall be contained inside the modules. Circuit boards shall conform to the requirements in Chapter 1, Section 6 of the "Transportation Electrical Equipment Specifications," (TEES) published by the State of California Department of Transportation.

G-2. Installation

- a. LED pedestrian countdown signal modules shall be designed as retrofit replacements for the existing pedestrian signals.
- b. Installation of a replacement LED module into the existing pedestrian housing shall only require the removal of the existing optical unit components, i.e., lens, lamp, gaskets, and reflector. Where existing Type A pedestrian signal faces contain both incandescent and LED light sources, both light sources shall be removed and replaced by new LED pedestrian countdown signal face module in conformance with these specifications.

- c. The contractor may use the retrofit replacement for the existing pedestrian signal or provide a new LED 16" × 18" pedestrian countdown signal.
- d. LED pedestrian countdown signal modules shall not require special tools for installation.
- e. LED pedestrian countdown signal modules shall fit into the existing traffic housings built to the ITE Publication: Equipment and Materials Standards, Chapter 2 "Vehicle Traffic Control Signal Heads" (VTCSH) without any modification to the housing.
- f. LED pedestrian countdown signal modules shall be weather tight, fit securely in the housing and shall connect directly to existing electrical wiring.

G-3. Signal Lens

The lens of the LED pedestrian countdown signal modules shall be polycarbonate UV stabilized and a minimum of ¼" thick.

The exterior of the lens of the LED pedestrian countdown signal module shall be smooth and frosted to prevent sun phantom.

G-4. Construction

- a. The LED pedestrian countdown signal module shall be a single, self-contained device, not requiring on-site assembly for installation into the existing traffic signal housing and include an installed gasket.
- b. The LEDs for the "Upraised Hand" shall be Portland Orange and shall utilize Aluminum Indium Gallium Phosphide (AlInGaP) technology or equal, and rated for 100,000 hours or more of continuous operation from -40°C to +74°C. The LEDs for the "Walking Person" shall be Lunar White and shall utilize InGaN technology.
- c. All internal LED and electronic components shall be adequately supported to withstand mechanical shock and vibration from high winds and other sources.
- d. The signal module shall be made of UL94VO flame-retardant materials. The lens is excluded from this requirement.
- e. The lens of the LED pedestrian countdown signal modules shall be polycarbonate UV stabilized.
- f. The exterior of the lens of the LED pedestrian countdown signal module shall be uniform and frosted to reduce sun phantom effect.
- g. Each individual LED traffic module shall be identified for warranty purposes with the manufacturer's trade name, serial number and operating characteristics, i.e., rated voltage, power consumption, and volt-ampere.

G-5. Environmental Requirements

- a. The LED pedestrian countdown signal modules shall be rated for use in the ambient operating temperature range of -40°C to +60°C (-40°F to +140°F).
- b. The LED pedestrian countdown signal modules, when properly installed with gasket, shall be protected against dust and moisture intrusion per requirements of NEMA Standard 250-1991, sections 4.7.2.1 and 4.7.3.2, for Type 4 enclosures to protect all internal LED, electronic, and electrical components.

G-6. Luminous Intensity

- a. Pedestrian countdown LED signal modules shall be designed to operate over the specified ambient temperature and voltage range, attract the attention of, and be readable by, a viewer (both day and night) at all distances from 3 m to the full width of the area to be crossed.
- b. The luminous intensity of the LED pedestrian countdown signal module shall not vary more than $\pm 10\%$ for voltage range of 80 VAC to 135 VAC.

G-7. Chromaticity

The measured chromaticity coordinates of the LED signal modules shall conform to the chromaticity requirements as follows:

“Upraised Hand” shall be Portland Orange.
not greater than 0.390, nor less than 0.331, nor less than $0.997 - x$.

“Walking Person” shall be Lunar White.
 x : not less than 0.290, nor greater than 0.330
 y : not less than $1.5x - 0.175$, nor greater than $1.5x - 0.130$

G-8. Electrical

- a. The secured, color coded, 914 mm (36 in) long, 600V, 20 AWG minimum, jacketed wires, conforming to the National Electrical Code, rated for service at +105°C, are to be provided for electrical connection.
- b. The LED pedestrian countdown signal module shall operate from a 60 ± 3 Hz AC line over a voltage range of 80 VAC to 135 VAC. Rated voltage for all measurements shall be 120 ± 3 volts rms.
- c. The LED circuitry shall prevent perceptible flicker over the voltage range specified above.
- d. The LED pedestrian countdown signal module circuitry shall include voltage surge protection against high-repetition noise transients and low-

repetition noise transients as stated in Section 2.1.6, NEMA Standard TS-2, 1992.

- e. Catastrophic failure of one LED light source shall not result in the loss of more than the light from that one LED.
- f. The LED pedestrian countdown module shall be operationally compatible with the currently used controller assemblies. The LED pedestrian and countdown module shall be operationally compatible with conflict monitors.
- g. The LED pedestrian countdown module including its circuitry must meet Federal Communications Commission (FCC) Title 47, Subpart B, Section 15 regulations concerning the emission of noise.
- h. The LED pedestrian countdown module shall provide a power factor of .90 or greater over the operating voltage range and temperature range specified above for modules with 6 watts or more.
- i. Total harmonic distortion (current and voltage) induced into an AC power line by an LED pedestrian countdown module shall not exceed 20% over the operating voltage range and temperature range specified above.

G-9. Functions

a. Basic operation

The control and regulation module shall be of the “smart” type in order for the countdown displays to be automatically adjusted with the programmed intervals of the traffic controller.

b. Operating Modes

The module shall operate in two different modes:

- i) Full Cycle Countdown Mode – The module will start counting when the walk signal is energized. It will countdown the full walk and flashing clearance signal to reach “0” and turn off when the steady “Don’t Walk” signal turns on.
- ii) Clearance Cycle Countdown Mode – The module will start counting when the flashing clearance signal turns on and will countdown to “0” and turn off when the steady “Don’t Walk” signal turns on.

Note: The units shall be set on the clearance cycle countdown mode at the factory. The units shall be changeable to either mode by a “jumper wire” on the back of the unit.

c. **Power failure**

The equipment must maintain a consistent countdown during short power failures (<1 second). A longer failure or an absence of signal superior to one (1) second must turn off display and trigger a restart system remembering the last sequence, as it is done for the NEMA traffic controller.

G-10. Quality Assurance

LED pedestrian countdown modules shall be manufactured in accordance with a Vendor quality assurance (QA) program including both design and production quality assurance. All QA process and test result documentation shall be kept on file for a minimum of seven years.

G-11. Warranty

- a. The unit shall be repaired or replaced by the contractor if it exhibits a failure due to workmanship or material defect within the first 60 months of delivery.
- b. The unit shall be repaired or replaced if the intensity level falls below 50% of the original values within 60 months of delivery.

H. PEDESTRIAN/BICYCLE PUSH BUTTONS

H-1. General

- a. All pedestrian/bicycle push-button assemblies shall be a Type B and shall conform to the provisions in Section 86-5.02, "Pedestrian Push Buttons," of the Standard Specifications.
- b. The mounting height for Pedestrian Push-Button Assemblies shall be in accordance with the State of California, Department of Transportation Standard Specifications (39.4") from the top of sidewalk or in the case of a median pedestrian push-button post, from the top of roadway (not top of curb or median paving).

H-2. Measurement and Payment

Full compensation for pedestrian/bicycle push-button assemblies shall be considered as included in the contract lump sum prices paid for installation of LED pedestrian countdown signals at the intersections of

Whisman Road/Whisman Station and Middlefield Road/Farley Street and no additional compensation will be allowed therefor.

I. SIGNAL MOUNTING ASSEMBLIES

Signal mounting assemblies for the LED 16" x 18" pedestrian countdown signals shall conform to State Standard Specifications, Section 86-4.08.

J. BID ITEMS

J-1. Bid Item No. 1 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Castro Street and Villa Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-2. Bid Item No. 2 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Castro Street and Dana Street, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-3. Bid Item No. 3 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Castro Street and Mercy Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-4. Bid Item No. 4 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Castro Street and Church Street

complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-5. Bid Item No. 5 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Shoreline Boulevard and Montecito Avenue/Stierlin Road complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-6. Bid Item No. 6 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Shoreline Boulevard and Latham Street/Church Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-7. Bid Item No. 7 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Shoreline Boulevard and Middlefield Road complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-8. Bid Item No. 8 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Shoreline Boulevard and Terra Bella Avenue complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all

related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

- J-9. Bid Item No. 9 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Shoreline Boulevard and Wright Avenue complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-10. Bid Item No. 10 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Rengstorff Avenue and Latham Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-11. Bid Item No. 11 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Rengstorff Avenue and California Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-12. Bid Item No. 12 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Rengstorff Avenue and Montecito Avenue/Jewell Place complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

- J-13. Bid Item No. 13 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Rengstorff Avenue and Middlefield Road complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-14. Bid Item No. 14 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Rengstorff Avenue and Old Middlefield Way complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-15. Bid Item No. 15 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Moffett Boulevard and Central Avenue complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-16. Bid Item No. 16 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Moffett Boulevard and Middlefield Road complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-17. Bid Item No. 17 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Grant Road and Bentley Square complete, operational and in accordance with the plans and specifications.

This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-18. Bid Item No. 18 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Grant Road and Cuesta Drive complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-19. Bid Item No. 19 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Grant Road and Eunice Avenue/North Drive complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-20. Bid Item No. 20 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of California Street and Ortega Avenue complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-21. Bid Item No. 21 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of California Street and Showers Drive complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as

required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

- J-22. Bid Item No. 22 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of California Street and Pacchetti Way complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-23. Bid Item No. 23 - Furnish and install eight (8) LED pedestrian countdown signals at the intersection of Evelyn Avenue and Hope Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-24. Bid Item No. 24 - Furnish and install six (6) LED pedestrian countdown signals at the intersection of Shoreline Boulevard and Villa Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-25. Bid Item No. 25 - Furnish and install six (6) LED pedestrian countdown signals at the intersection of Middlefield Road and Ellis Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

- J-26. Bid Item No. 26 - Furnish and install six (6) LED pedestrian countdown signals at the intersection of Evelyn Avenue and Calderon Avenue complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-27. Bid Item No. 27 - Furnish and install six (6) LED pedestrian countdown signals at the intersection of Bush Street and Villa Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-28. Bid Item No. 28 - Furnish and install four (4) LED pedestrian countdown signals at the intersection of Evelyn Avenue and Pioneer Way complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-29. Bid Item No. 29 - Furnish and install four (4) LED pedestrian countdown signals at the intersection of Evelyn Avenue and Bush Street complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.
- J-30. Bid Item No. 30 - Furnish and install four (4) LED pedestrian countdown signals at the intersection of San Antonio Road and Fayette Avenue complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-

lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-31. Bid Item No. 31 - Furnish and install four (4) LED pedestrian countdown signals at the intersection of Grant Road and Bryant Avenue complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-32. Bid Item No. 32 - Furnish and install two (2) LED pedestrian countdown signals at the intersection of Evelyn Avenue and Ferry Morse Way complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

J-33. Bid Item No. 33 - Furnish and install two (2) LED pedestrian countdown signals at the intersection of Evelyn Avenue and Moorpark Way complete, operational and in accordance with the plans and specifications. This item shall be bid, measured and paid for on a per-lump sum basis. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all related work involved in completing this item as shown on the plans, as required by the manufacturer, these Specifications, the Standard Provisions and the Standard Specifications.

CITY OF MOUNTAIN VIEW, CALIFORNIA
 INSTALLATION OF COUNTDOWN PEDESTRIAN SIGNALS
 BID SCHEDULE
 PAGE 1 OF 4

| ITEM NO. | QUANTITY WITH UNIT | DESCRIPTION | NUMERICAL PRICE |
|----------|--------------------|---|-----------------|
| 1. | 1 LS | Install 8 Countdown Pedestrian Signals at Castro Street/Villa Street Intersection | \$ _____ |
| 2. | 1 LS | Install 8 Countdown Pedestrian Signals at Castro Street/Dana Street Intersection | \$ _____ |
| 3. | 1 LS | Install 8 Countdown Pedestrian Signals at Castro Street/Mercy Street Intersection | \$ _____ |
| 4. | 1 LS | Install 8 Countdown Pedestrian Signals at Castro Street/Church Street Intersection | \$ _____ |
| 5. | 1 LS | Install 8 Countdown Pedestrian Signals at Shoreline Blvd./Montecito Avenue/Stierlin Road Intersection | \$ _____ |
| 6. | 1 LS | Install 8 Countdown Pedestrian Signals at Shoreline Blvd./Latham Street/Church Street Intersection | \$ _____ |
| 7. | 1 LS | Install 8 Countdown Pedestrian Signals at Shoreline Blvd/Middlefield Road Intersection | \$ _____ |
| 8. | 1 LS | Install 8 Countdown Pedestrian Signals at | |

Shoreline Blvd./Terra Bella
Avenue Intersection

\$ _____

PAGE 2 OF 4

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|-----|---|----|--|----------|
| 9. | 1 | LS | Install 8 Countdown Pedestrian Signals at Shoreline Blvd./Wright Avenue Intersection | \$ _____ |
| 10. | 1 | LS | Install 8 Countdown Pedestrian Signals at Rengstorff Avenue/Latham Street Intersection | \$ _____ |
| 11. | 1 | LS | Install 8 Countdown Pedestrian Signals at Rengstorff Avenue/California Street Intersection | \$ _____ |
| 12. | 1 | LS | Install 8 Countdown Pedestrian Signals at Rengstorff Avenue/Montecito Avenue/Jewell Place Intersection | \$ _____ |
| 13. | 1 | LS | Install 8 Countdown Pedestrian Signals at Rengstorff Avenue/Middlefield Road Intersection | \$ _____ |
| 14. | 1 | LS | Install 8 Countdown Pedestrian Signals at Rengstorff Avenue/Old Middlefield Way Intersection | \$ _____ |
| 15. | 1 | LS | Install 8 Countdown Pedestrian Signals at Moffett Blvd./Central Avenue Intersection | \$ _____ |
| 16. | 1 | LS | Install 8 Countdown Pedestrian Signals at Moffett Blvd./Middlefield Road Intersection | \$ _____ |
| 17. | 1 | LS | Install 8 Countdown Pedestrian Signals at Grant Road/Bentley Square | |

Intersection \$ _____

PAGE 3 OF 4

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|-----|---|----|---|----------|
| 18. | 1 | LS | Install 8 Countdown Pedestrian Signals at Grant Road/Cuesta Drive Intersection | \$ _____ |
| 19. | 1 | LS | Install 8 Countdown Pedestrian Signals at Grant Road/Eunice Avenue/ North Drive Intersection | \$ _____ |
| 20. | 1 | LS | Install 8 Countdown Pedestrian Signals at California Street/Ortega Avenue Intersection | \$ _____ |
| 21. | 1 | LS | Install 8 Countdown Pedestrian Signals at California Street/Showers Drive Intersection | \$ _____ |
| 22. | 1 | LS | Install 8 Countdown Pedestrian Signals at California Street/Pacchetti Way Intersection | \$ _____ |
| 23. | 1 | LS | Install 8 Countdown Pedestrian Signals at Evelyn Street/Hope Street Intersection | \$ _____ |
| 24. | 1 | LS | Install 6 Countdown Pedestrian Signals at Shoreline Blvd./Villa Street Intersection | \$ _____ |
| 25. | 1 | LS | Install 6 Countdown Pedestrian Signals at Middlefield Road/Ellis Street Intersection | \$ _____ |
| 26. | 1 | LS | Install 6 Countdown Pedestrian Signals at Evelyn Avenue/Calderon | |

Avenue Intersection \$ _____

PAGE 4 OF 4

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|-----|---|----|--|----------|
| 27. | 1 | LS | Install 6 Countdown Pedestrian Signals at Bush Street/Villa Street Intersection | \$ _____ |
| 28. | 1 | LS | Install 4 Countdown Pedestrian Signals at Evelyn Avenue/Pioneer Way Intersection | \$ _____ |
| 29. | 1 | LS | Install 4 Countdown Pedestrian Signals at Evelyn Avenue/Bush Street Intersection | \$ _____ |
| 30. | 1 | LS | Install 4 Countdown Pedestrian Signals at San Antonio Road/Fayette Avenue Intersection | \$ _____ |
| 31. | 1 | LS | Install 4 Countdown Pedestrian Signals at Grant Road/Bryant Avenue Intersection | \$ _____ |
| 32. | 1 | LS | Install 2 Countdown Pedestrian Signals at Evelyn Avenue/Ferry Morse Way Intersection | \$ _____ |
| 33. | 1 | LS | Install 2 Countdown Pedestrian Signals at Evelyn Avenue/Moorpark Way Intersection | \$ _____ |

TOTAL BID: \$ _____

Notes:

1. All items must be bid.
2. The City reserves the right to reject any or all bids.

3. Payment shall include full compensation for furnishing all labor, materials, tools equipment and incidentals for doing all the work involved in installing the countdown pedestrian signals, complete and in place, including, but not limited to, removal of materials and placement of signs and traffic control in accordance with Caltrans' standards.